

Is there an Academic Benefit to Participating in Extracurricular Activities?

A Systemic Review and Meta-analysis

by

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### **Abstract**

Low educational performance in impoverished children is a growing epidemic affecting public health and placing states at great financial risk. Making available more extracurricular activities to children of lower socioeconomic status (SES) can help diminish this public health crisis.

Without addressing these gaps in learning, education will not be able to improve a child's life, as existing structures will continue to perpetuate their poverty, and will not be able to reduce the impacts to their health, quality of life, and financial and occupational success. The resources available to those of lower SES must be evaluated to determine if their needs can be supplemented by providing adequate opportunities to engage in extracurricular activities. The objective of this study is to evaluate the benefit of extracurricular activities and their impact on improving academic performance and subsequent SES. This study aims to show that those of lower SES who regularly participate in extracurricular activities improve their academic performance. This research will be conducted using a quantitative meta-analysis of peer-reviewed research published after 2010. Results show that each study reviewed had significant results based on the confidence intervals associated with the study's measured effect. However, when combined, the confidence interval associated with the combined effect demonstrated statistical significance at a small combined effect size. Although this combined effect size could translate into relevant financial savings, based on the results of this study more research is recommended to determine if there is clinically significant differences in academic achievement based on participation in extracurricular activities.

## **Introduction**

The continued poor academic performance of children of low socioeconomic status (SES) contributes to a growing epidemic affecting public health and placing the country at great financial risk (Conger, Conger, & Martin, 2010). Leaders and policymakers continue to claim that the key to ending poverty is success in education (NM Center on Law and Poverty, 2014). Although the United States is a nation known for producing some of the best minds in the world, children from low SES backgrounds may not receive the education they need to eliminate health disparities, inequalities in housing, unsafe environments, reduced access to resources, and poor academic performance (NM Center on Law and Poverty, 2014). The observed differences in academic achievements among children of lower SES as compared to those of higher SES have been attributed to different causes, however their socio-ecological environment consistently has been identified as contributing to these differences (Conger et al., 2010). Given that there continues to be persistent confusion regarding the benefits of participation in extracurricular activities (EAs), I will conduct a quantitative meta-analysis of the current peer-reviewed literature to determine if there is any evidence to support that the academic achievement (AA) of children of higher SES can be attributed to their participation in EAs.

The purpose of this study is to identify a way to mitigate the inequality in education and AA existing among youth today. Currently, in at least 43 states and the District of Columbia, curricula is delivered in the same manner, with the same expectations for youth of higher and lower SES as part of the common core standards (Common Core Standards Initiative, 2014). Unfortunately, this leaves little room for flexibility in instructional methods and design in order to accommodate for differences in the differing needs of children and youth based on their SES (NM Center on Law and Poverty, 2014). While this design meets the needs of youth of higher

SES, children of lower SES are not afforded the same opportunities to develop as their peers of higher SES (Chin & Phillips, 2004). This is due to the parents of children of lower SES not being able to supplement their child's educational learning with opportunities that explore their other talents, such as engaging them in physical activity, and exploring other socialization opportunities (Chin & Phillips, 2004). If children of lower SES were offered EAs through their school, as either part of the regular curricula or as part of a school provided EA program, they would also be able to cultivate their talents, engage in physical activity, and explore socialization opportunities. This way the learning and development may occur at the same pace regardless of SES and children living in poverty would be able to meet and exceed educational expectations. This introduction of EA programs into the system could result in youth of lower SES demonstrating the same or higher academic performance as their peers of higher SES. Ultimately, this would lead to the educational success and improved occupational and financial opportunities.

Potential contributions of this research include finding results and conclusions to influence policy decisions that would assure that schools attended by children of lower SES are allocated additional resources to provide EAs for their students. As a result of the increased resources, students of lower SES will have the opportunity to improve their AA. Possible implications for positive social change include a more educated youth, a reduction in poverty, fewer health disparities, better allocations of resources, such as public funds being allocated for EAs in schools rather than for high-dollar health costs associated with unemployment and low SES, and an increased in stability among state and federal economies.

Given that children of lower SES are not afforded the same opportunities as those of higher SES to engage in EA, and due to this their academic performance suffers, I propose two research questions and associated hypotheses as the focus of this study:

1. Is there a relationship between SES and participation in extracurricular activities?

H<sub>01</sub>: Youth of higher SES do not participate more frequently in EAs than youth of lower SES.

H<sub>A1</sub>: Youth of higher SES participate more frequently in EAs than youth of lower SES.

2. Is there a relationship between participation in extracurricular activities and academic achievement?

H<sub>01</sub>: Youth who participate in EAs do not score higher academically than youth of lower SES.

H<sub>A1</sub>: Youth who participate in EAs score higher academically than youth of lower SES.

I will test these hypotheses by conducting a quantitative meta-analysis to determine if recent peer-reviewed studies support or reject these hypotheses. The scope and parameters of this study will include studies published from 2006-2014 on school-aged youth attending public and private schools in the United States. This study is limited by the research available that meets the criteria established and described in the methods section.

### **Theoretical foundation**

In 1973, a theorist named Pierre Bourdieu coined the term “cultural capital” a term he used to define non-financial assets and successes such as education, intellect, articulation, and physical

appearance proposing that cultural capital directly converted into the AA, occupational success, and a better quality of life representative mostly in those of higher SES and not as frequently in those of lower SES (Dumais, 2006). These consistent differences in cultural capital and AA demonstrated by those of higher and lower SES have created an epidemic that may only be responsive to an ecological solution. Given that health, behavior and their determinants are integrated in socio-ecology, the ecological systems theory developed by Bronfenbrenner (1994) is the foundational theory that would best address this issue. In his theory, Bronfenbrenner proposes that people's actions and decisions are most likely influenced by changing a specific environmental factor with a main purpose to promote or use available resources that will strongly impact behavioral change (DiClemente, Salazar, & Crosby, 2013). However, in order to solicit lasting change, the interaction of the influencing factor must occur regularly and consistently over time (DiClemente et al., 2013). Bronfenbrenner (1994) defines this as the "proximal process," a process found in parent to child, and child to child activities including EAs. Unfortunately, the proximal process has negatively impacted child development specifically with regard to cognitive ability, AA, and social skills in neighborhoods and environments of lower SES (Bronfenbrenner, 1994). Conversely, it has positively impacted the youth's development and specifically their AA in environments of higher SES (Bronfenbrenner, 1994).

Although many studies have been completed to support the relationship and importance of EAs based on Bronfenbrenner's theoretical paradigm, (Feldman & Matjasko, 2005) it was Annette Lareau (2003) who proposed that the differences in the environment of children of higher and lower SES could be attributed to parenting styles that mainly differed in the children's routines and way the parents scheduled their children's day. In her study, Lareau studied 88 families overall, and then spent time conducting an in-depth observation of 12

families. Lareau (2003) found that the children of low and high SES were cared for equally, but that the children of lower SES had a far less structured day than the children of a higher SES. She also found that the children of higher SES spent most of their day being parented by what she called “concerted cultivation,” meaning that the parents of higher SES would promote their child’s talents and interests by engaging them regularly in EAs (Lareau, 2003). Lareau concluded that as a result of concerted cultivation, children who engage regularly in EAs learned to challenge authority, navigate bureaucracy and manage their time all of which contribute to higher AA and ultimately to occupational success (Lareau, 2003).

In 2004, Chin and Phillips challenged Lareau but found that the differences in parenting styles were attributed to a lack of resources and not due to the difference in values or beliefs. Chin and Phillips found that parents of low SES valued EAs and supported their children’s involvement in EAs just as much as the parents of a higher SES; however, unlike children of a higher SES, children of lower SES lacked the opportunity to cultivate their interests or talents (Chin & Phillips, 2004). They attributed this to a lack in funds and resources needed to attend such activities (Chin & Phillips, 2004). This issue was further explored in a quasi-experimental study by Mahoney, Lord, and Carryl (2005) who evaluated the differences in AA among 599 first, second, and third-grade students of low SES. They found that children who participated in a child care program called the After School Program (ASP) that offered EAs such as computers, dance, music, art, and sports, the children demonstrated improved academic performance and motivation to learn as compared with children participating in the other types of child care (Mahoney et al., 2005).

Historically, environmental differences embedded in the proximal process have demonstrated both a positive and negative impact to the cultural capital of children based on their SES. Others,

including Lareau (2003), Chin and Phillips (2004), and Mahoney et al., (2005), found that those differences can be attributed to concerted cultivation. The proposed research will answer an important research question because the powerful influence an environmental change such as access to EAs can increase AA and positively affect the health behavior in those of lower SES. In this study, I will conduct a meta-analysis to determine if the findings of others were a zeitgeist, that is, spirit of the times, or if more recent studies support these observations. If the differences still existing in the AA between children of lower SES and higher SES, can be attributed to environmental factors such as their participation in EAs?

### **Population**

SES is generally defined by education, income, and occupation, and a low SES has been found to have a direct correlation to lower education, poverty, poor health and a lower quality of life (American Psychological Association, 2014). The United States struggles with providing physical education, EAs, and is overwhelmed by the number of children living in poverty (Schuna, Lauersdorf, Behrens, Liguori, Liebert, 2012). In the United States, the South was the highest region with school-aged children living in poverty at 23% (United States Department of Education, 2012). The West came in second at 21%, followed by the Midwest at 19%, and the Northeast at 18% (United States Department of Education). Of all 50 states and the District of Columbia, 15 states including Alabama, Arizona, Arkansas, California, Florida, Georgia, Kentucky, Louisiana, Michigan, New Mexico, North Carolina, South Carolina, Tennessee, Texas, and Washington D.C. ranked higher in poverty than the national average with Mississippi ranking with the highest poverty rate at 32% (United States Department of Education, 2012). The overall poverty rate in the United States is currently 17% higher than it was in 1990, and current



statistics show approximately 21% of the 11.1 million school-aged (5-17 years) children are living in poverty (United States Department of Education, 2012).

This high poverty rate has had a major impact on the Nation's academic performance, as current reading tests reflect differences in scores based on the SES of enrolled students. Currently in the United States, in the schools where their enrollment includes 90% of children of middle to high SES, their overall test scores for reading and math rank as some of the highest in the world (NM Center on Law and Poverty, 2014). Unfortunately, since the United States schools are so overrun by youth in poverty, once children of low SES are factored in, the Nation's overall reading and math scores of youth in the United States are actually quite low when compared to other countries. When considering schools of all SES, the United States ranks twenty-fourth in the world in reading behind Poland, Estonia, and Liechtenstein; and thirty-sixth in the world in math behind Latvia, Vietnam, Spain, and Portugal with only 20% of low-income students scoring at or above proficiency on national assessments for reading and math (NM Center on Law and Poverty, 2014).

It is accepted that physical activity is important for children, and it is believed that most children are afforded the opportunity to participate in adequate levels of physical activity during their school day. Unfortunately, in the United States, children are not provided the opportunity to engage in adequate levels of physical activity (Schauna et al., 2012). Current guidelines for physical activity state that children should engage in a minimum of 60 minutes of physical activity per day, with the majority of activity requiring moderate to vigorous intensity (Schauna et al., 2012). Currently, only 3.8% of elementary schools across the nation provide physical education every day to all children during the school year. This accounts for only 42% of children between the ages of 6-11 years of age (first through fifth grades) meeting the minimum

requirement for physical activity. As a result, children must rely on EAs as a means of accomplishing this goal (Schauna et al., 2012).

### **Academic Achievement**

AAs for children in elementary school, and more specifically in third grade, is critical as it sets the foundation for occupational and financial success that can narrow the existing gaps between those of lower and higher SES in all areas (Hernandez, 2012). Given this, this study will use AA as the measure or outcome to determine if there is a benefit to participating in EAs. Given that children of lower SES do not have the resources for basic needs such as housing, food, and clothing, engagement in EAs may not be priority for lower SES families. As a result, children of lower SES do not develop academic skills at the same rate as other children, yet they are expected to progress through school at the same rate as those of higher SES. Unfortunately, instead of narrowing that gap in learning and development, the gap is widened to the point of children dropping out of school, not graduating, having difficulty finding employment, and continuing to live and raise their children in poverty (Hernandez, 2012).

These gaps in education and AA are critical as they can set the stage for determining the health of a person throughout his or her lifespan (Ficella & Kitzman, 2009). It is also known that physical education plays an important role in the health and wellness of children (Schuna et al., 2012) and that physical education and activity play an integral role in academic success (Wi, 2012). Education and health are two areas that should not be separated. Both share in their contributions of human development creating a symbiotic relationship that balances the overall health and well-being of a person. To eliminate the gaps and health disparities that exist among those of lower and higher SES, it is important to concurrently address the educational gaps that exist with development and AA in children of lower SES while addressing their overall health

needs. These gaps can be identified through the evaluation of needed resources, and the redistribution of those resources to provide equity among children of all SES levels (Ficella & Kitzman, 2009).

### **School Based Extracurricular Activities**

Exposure to EAs, specifically physical activity, has been demonstrated to improve the health in children of lower SES. When children of lower SES are given the opportunity to participate in a school-based extracurricular physical activity, they did so to the point of improving their overall health (Schuna et al., 2012). In addition to health, regular participation in physical activity has been found to improve the cognitive and memory functions of the brain that contribute directly to improvements in AA in adolescent males and females (Wi, 2012). Further, Trudeau and Shepherd (2010) suggest that reducing the time of focused academic learning to incorporate physical activities has no negative impact on AA. Studies on the effects of participation in extracurricular physical activities have shown that eighth grade youth of low SES who were involved in EAs achieved grades at or higher than expected as compared to their academic grades from the previous year when they were not involved in EAs (Fredricks & Eccles, 2008).

Given that schools offer inadequate amounts of physical activity and children of lower SES lack the resources to seek out this activity independently or privately, low SES children are at risk of experiencing the adverse effects of inactivity (Schuna et al., 2012). Lack of participation in physical activity accounts for many health related concerns specifically related to AA, as physical activity directly affects metabolism, cognition, emotions, and school connectedness, which are all relevant to AA (Basch, 2010). Lack of participation can be attributed to negative consequences faced by children who are not afforded the opportunity to engage in EAs. Without

this opportunity, they may fall behind academically and ultimately continue to live life in poverty (Basch, 2010). Due to the benefit of participation in EAs, in this study I will review the participation of EAs and evaluate its benefit to improving the AA in those of low SES.

### **Methodology**

I will conduct a quantitative meta-analysis of studies published between the years of 2006-2014. I will use an observational design to consolidate recent peer-reviewed and published research to determine the effect size and significance of the relationships between SES participation in extracurricular activities, and participation in EAs and AA. To do this, I will conduct a literature review using search engines including Google; Google Scholar; JSTOR; PubMed; and WorldCat to identify only peer-reviewed published research on participation in EAs and their relationship to academic performance in youth of high and low SES. I will also use the following university libraries: Concordia (Nebraska) and New Mexico (Albuquerque and Valencia). Search terms include extracurricular, physical activity, academic achievement, academic performance, school-based, school-based extracurricular activities, school offered, school provided, impoverished children, children lower socio-economic status, dance, music, art, sports, school clubs, child development, disadvantaged, poor, poor children, health disparities, cultural capital, concerted cultivation, health disparities and children, and ecological model. The terms will be searched independently and in various combinations. Additional search strategies include conducting a review of sources and references from each of the studies found as part of this process.

## **Inclusion and Exclusion Criteria**

Inclusion and exclusion criteria were determined before I conducted the search to ensure appropriate studies are included as part of the meta-analysis. This will help to eliminate bias that could be introduced during the search. The inclusion criteria is as follows: peer reviewed studies, studies reviewing the relationships between SES participation in EAs, and academic performance, studies using quantitative methods, studies using standardized data collection methods, and studies using representative sampling. The exclusion criteria is as follows: studies older than ten years, studies that did not conduct hypothesis testing, studies that do not present a clear description of their sampling, and data collection and analysis methodology, and studies that do not specifically define the type or types of extracurricular activities.

Data from each of the selected studies will be abstracted and added to a spreadsheet to identify specific information about populations, samples, methodologies, research questions, and outcomes. Data will be sorted according to similar categories and to identify possible variables for consideration, as well as an identification of sample size and demographics.

I will use meta-analysis to combine the results of several studies that used quasi-experimental methodologies. The data from each study will be pooled and statistically analyzed to determine the relationship between SES and participation in EAs, and AA and participation in EAs. Data from all studies will be aggregated or synthesized, subdivided by research question, and entered into MetaEasy for analysis. Two different analyses will be conducted, the first to address the first research question and determine if there is a relationship between SES and participation in EAs, and the second to address the second research question and determine if there is a relationship between participation and AA. I will interpret the results based on the combined p value and the magnitude of any observed effect. If the p value is less than 0.05 ( $p < 0.05$ ) the

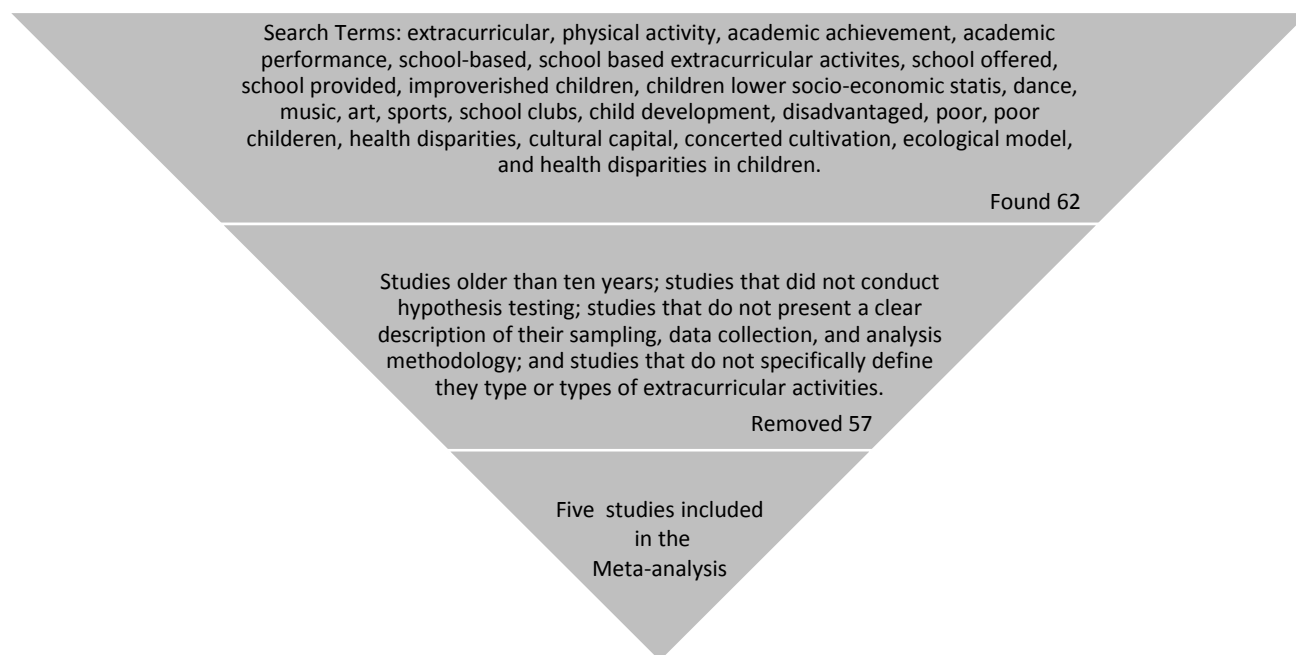
findings will be judged statistically significant and will allow me to reject the null hypothesis. I will also assess whether the magnitude of the effect justifies labeling the effects of programs as clinically significant. Results will be presented in tables, graphs, and narrative.

## Results

### Data Collection

I conducted a quantitative meta-analysis to determine if there is a relationship between participation in EAs and improved AA in those of lower socio-economic status (SES). Inclusion and exclusion criteria and the number of studies reviewed are presented in Figure 1.

**Figure 1: Process to select studies for inclusion in meta-analysis.**



By combining, pooling, and coding the combined data results from each of five quasi-experimental studies, I analyzed the data to determine if there is a relationship between participation in EAs and AA among youth of lower SES. I did this by abstracting the statistical data from each of the five included studies using the methodology recommended by Lipsey and

Wilson (2001). I separated the data based on the variables used in each study and then clustered it into categories relevant to all included studies. As EAs differed by study, I created a new binomial variable with the possible responses of yes, participated in an EA, or no, did not participate in an EA. I present identifying information on the studies included in the meta-analysis as well as the effects measured in Table 1. For the similar reasons, I accepted any method used by the authors as a measure of AA clustering all of the measures into the one category of AA. Finally, I assigned the SES data for the youth into one of four SES categories including low, almost low, middle, and high SES based on the descriptions of SES provided in each of the studies. This way the sample size for each of the SES groups could be determined consistently.

**Table 1. *Included Studies and Effects Measured***

Title	Author(s)	Date	Original (Adjusted) Sample Sizes	Variables	Effects Measured
After the Bell: Participation in EAs, Classroom Behavior, and AA	Covay & Carbonaro	2010	10,140 (5,045)	Youth of low SES participating in sports, clubs, music, and art	AA measured by reading and math grades
Participation in Activities Outside of School Hours in Relation to Problem Behavior and Social Skills in Middle Childhood	Howie, Lukacs, Pastor, Reuben, & Mendola	2010	25,797 (25,797)	Youth of low SES participating in sports, clubs, and both	AA through the demonstration of the social skills needed to excel in the classroom.
Does Cultural Capital Really Affect AA? New Evidence from Combined Sibling and Panel Data	Jager	2011	16,873 (10,387)	Youth of low SES participating in lessons, organizations, and hobbies	AA measured by the Peabody Individual Achievement Tests (PIAT)
A Longitudinal Examination of the Link Between Youth Physical fitness and AA	London	2010	1410 (1,002)	Youth of low SES participating in sports and physical fitness	AA measured through math scores
Effects of an Out-of-school Program on Urban High School youth's Academic Performance	O'Donnell & Kirkner	2014	735 (315)	Youth of low SES participating in a YMCA program	AA measured by academic GPA

The first study, conducted by Covay and Carbonaro (2010) used data from the National Center for Educational Statistics considering an overall sample of 10,140 youth. Covay and Carbonaro found that those of lower SES who participated in any sports, clubs, dance, music, art, and any EA increased their reading test scores (Covay & Carbonaro, 2010). In the second study, Howie, Lukacs, Pastor, Reuben, and Mendola, (2010) used data from the National Center for Health Statistics with a large sample of 25,797 youth and found that those of lower SES who participated in sports, clubs, and both, improved their AA with regard to having the necessary classroom social skills needed to excel academically. These included showing respect, getting along with others, understanding peers feelings, and the ability to resolve conflict (Howie et al., 2010). In the third study, Jaeger (2011) conducted an empirical analysis of 16,873 youth using data from the National Longitudinal Survey of youth, children, and youth adults and found that those of lower SES who participated in sports, organizations, and hobbies, improved their test scores on the Peabody Individual Achievement Test (PIAT). Also in 2011, London and Castrechini evaluated the relationship between engaging in sports or physical fitness activities finding that those of lower SES who were not physically fit as defined by not engaging regularly in sports or physical fitness activities, had issues with their educational and health outcomes. In the final study O'Donnell and Kirkner (2014) developed a program with the Young Men's Christian Association (YMCA) and the Long Beach unified School District (LBUSD). O'Donnell and Kirkner (2014) found that the academic Grade Point Average (GPA) of youth of low SES who participated in this program was higher than their peers of similar SES who did not participate.



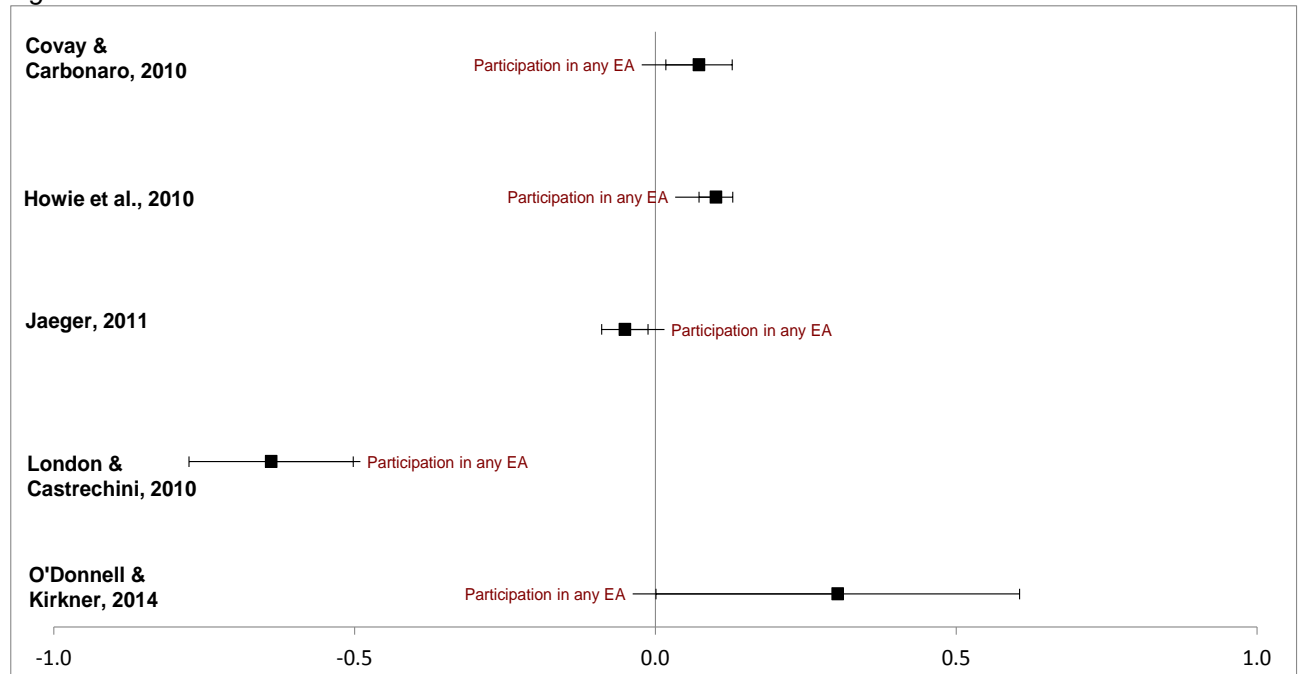
## Results

I entered all of the synthesized common measures into MetaEasy. Common measures included the sample size for intervention groups, sample size of control groups and their associated means. I did this in order to obtain confidence intervals, and an effect size for each of the studies, as well as an overall combined p-value, confidence interval and effect size.

Originally, two different MetaEasy analyses were going to be conducted to answer two research questions 1) is there a relationship between participation in EAS and SES, and 2) is there a relationship between participation in EAs and AA; however given that each study did not have all relevant information to assess the first question, the first question was discarded, as there was not enough information to conduct the analysis. However given that each study did have one group of low SES youth participating in EAs and one group of low SES youth not participating in the EAs there was enough information that could be abstracted from each of the five studies to analyze the second question with regard to SES. To allow for this change, the sample sizes for both the intervention and the control group had to be adjusted from the original combined sample size of 54,955 to 42,546. This way only those of low SES would be included in the analysis to determine if there is a relationship between participation in EAs and AA in youth of low SES. The results of this analysis are presented in Figure 2 and Table 2. Figure 2 demonstrates the effect size of each of the studies, while Table 2 presents the effect size along with the confidence intervals for each of the five studies described in Table 1 and presented in Figure 2.

**Table 2. Independent Effects of Included Studies**

Author(s)	Study Design	Variables	Effect Measured	Effect Size	95% Confidence Interval
Covay & Carbonaro	Longitudinal Analysis	Low SES youth participating in EAs	Academic Achievement	0.0725	0.0173, 0.1277
Howie et al.	Secondary Data Analysis	Low SES youth participating in EAs	Academic Achievement	0.1007	0.0725, 0.1288
Jager	Empirical Analysis	Low SES youth participating in EAs	Academic Achievement	-0.0506	-0.0891, -0.0121
London	Longitudinal Analysis	Low SES youth participating in EAs	Academic Achievement	-0.6386	-0.7751, -0.5020
O'Donnell & Kirkner	Multivariate Analysis	Low SES youth participating in EAs	Academic Achievement	0.3034	0.0012, 0.6056

**Figure 2: Forest Plot of Included Studies**

Each of the included studies had significant results based on the confidence intervals associated with the study's measured effect. The statistical significance of the findings of this study is based on the combined effect presented in Table 3.

**Table 3. Combined Effects**

Variable	Combined Sample Size	Effect Measured	Combined Effect Size	95% Confidence Interval
Youth of low SES participating in EAs	42,546	Academic Achievement	0.0367	0.0160, 0.0575

Though the confidence interval associated with the combined effect demonstrates statistical significance and I am able to reject the null hypothesis in favor of my hypothesis that participation in EA is associated with improved AA among children of low SES; however, the combined effect size of 0.0367 is very small, and based on the included studies I cannot assume clinically significant differences in AA based on participation in EAs.

### **Interpretation of the Findings**

The purpose of my study was to look at the current research to determine if there was evidence to support the hypothesis that youth of lower SES who engage regularly in EAs, will have higher AA than their peers. Each study independently supports their findings demonstrating consistency with Bronfenbrenner's (1994) original ecological systems theory. This is reflected in each of the studies by their sample group's influence of EAs. This includes targeted environmental factor and its influence promoting a strong behavioral change in their AA. The individual results showed in the Covay and Carbonaro (2010) study, that after they identified youth by SES into one of four categories including low, second, third, and high, and evaluated the influence of any sports, clubs, dance, music, and art, they found that the influence of these

EAs promoted a significant behavioral change in the reading and math scores of those of low SES. Howie, Lukacs, Pastor, Ruben, and Mendola (2010), after identifying youth by SES into one of three categories including poor, near poor, and not poor, evaluated the influence of sports, clubs, and both sports and clubs, found to find that the poor youth who engaged in EAs were so influenced that they demonstrated a significant behavioral change in the social skills needed for AA including showing respect, getting along with others, understanding peers feelings, and the ability to resolve conflict. Jager (2011), after categorizing youth into one of three categories of low, middle, and high SES, evaluated the influence of sports, organizations, and hobbies to find that youth of low SES demonstrated a significant behavioral change as reflected on their Peabody Individual Achievement Tests (PIAT). London and Castrechini (2011), after identifying youth of low SES by the free lunch program offered by the school district found that physical fitness impacted the youth by eliciting a behavioral change with respect to their math scores. O'Donnell and Kirkner (2014), after introducing a specialized EA program to youth of low SES, found that the program significantly impacted the youth reflecting a behavioral change in their AA as evidenced by their academic grade point average.

Overall, the results demonstrated that there was some relationship or correlation between participation in EAs and AA and that the influence of the targeted environmental factor, EA, contributed to a significant improvement in behaviors related to AA. However, while each study had significant results, the combined effect was not as strong as I anticipated. Given that each of the studies independently had results that were both clinically significant and statistically significant, I had anticipated a strengthening of observed effects once the studies were analyzed collectively. There were many findings consistent across the studies, including their purpose, and outcome. Each of the studies reviewed the impact of EAs and their influence on the AA in youth

of low SES. Additionally, each of the studies found that when youth of low SES participated in EAs, their AA improved.

Unfortunately, I had not anticipated the effects of inconsistencies among the studies. Variations in definitions and approaches to research made it difficult to observe a clinically and statistically significant combined effect using meta-analysis. Due to these inconsistencies, there is not enough evidence to support a causal relationship between EAs as a general category and AA as reflected in the combined results. This could possibly explain why, in an area heavily researched over the past decades, there remains a lack of financial support to implement and expand extracurricular activities in low SES neighborhoods and school districts throughout the United States.

Although the combined effect of the results was not as strong as it might have been if the sample groups were similar and the variables and measures were identical, the financial effect could still prove to be very relevant. For example, currently there are approximately 2.3 million that is, 21 percent of the total 11.1 youth between the ages of 5-17 living in poverty in the United States (United States Department of Education, 2012). Based on this, if the nation invested \$1,200 annually per child in poverty for extracurricular activities; enough to cover one \$100 per month for a activity such as dance classes, music lessons, or sports it would cost the federal government a total of \$2.76 billion to improve the AAs in children and directly address ending the poverty cycle.

Although this amount is substantial, it is small when compared to the \$550 billion spent each year on poverty (Worstell, 2012). For example, currently there are 2.3 million youth (United States Department of Education, 2013) and 45.3 youth and adults living in poverty in the United States (United States Census Bureau, 2014). Based on this, I divided the total amount spent

annually on poverty in the United States by the total number of people in poverty and found that the United States spends an average of \$12,141 per person on poverty annually. If spending the proposed amount of \$2.76 billion on the 2.3 million youth in poverty on EAs, so they could improve their AA, and directly address the cycle of poverty, and doing so reduced the overall poverty rate by only five percent, then the total number of individuals in poverty would be 43 million instead of 45 million. This impact may not seem substantial, however when translated into dollars, it means the United States would be spending \$12,141 annually on only 43 million people along with the \$2.76 billion annually on EAs for youth of lower SES. This combined total is approximately \$524.76 billion as opposed to \$550 billion; this represents a cost savings of \$25.24 billion annually.

Further, if over time EA programs were able to reduce poverty by ten percent, the United States would be able to save 54 billion dollars directly spent on poverty; even with an investment of \$13.32 billion on EAs for all school aged youth at \$1200 per the 11.1 million youth between the ages of 5-17 who are currently enrolled in school the United States (U.S. Department of Education, 2013). This would save approximately \$40.68 billion per year. Additionally, if participation in EAs proved to impact poverty exponentially eliminating poverty, the financial impact would yield a savings equivalent to ten times current expenditures. For example, if over time the United States were able to spend \$1200 annually on EA programs for youth, as opposed to \$12,000 annually on poverty the Nation would save \$10,800 per person per year. This is relevant in that although the combined effect of this study showed a small applicability to the overall population there is still potential for significant financial savings even if the impact only affected five to ten percent of the overall population living in poverty. Given this, it appears that it would be worth the time and money to conduct more research, perhaps in the form of a pilot

program to determine if the provision of EAs for those in low SES will directly impact the financial status and overall health of our Nation.

### **Limitations of the Study**

The effect of the EAs once combined may not be accurate to the limitations of this study. These limitations included varied sample types and methods; varied definitions of EA, AA, and levels of SES; and varied study execution. Other limitations included a possibility that not all relevant studies were included, as I was limited by the search criteria, libraries, and search engines, as well as by the possibility of publication bias, meaning that studies yielding positive results are more frequently published.

Although I attempted to mitigate bias in every possible way, there are other factors that could have created limitations in this study. These include the inclusion and exclusion criteria used to select the studies. While this study focused on the most current and most recent studies to assure previous findings were still applicable, there may have been studies falling just outside of the inclusion/exclusion criteria that would have impacted the results of this study. Other limitations could have been the methodology used to conduct the meta-analysis and analyze the results. Clustering the EAs into one category could have contributed to the effect size differently than if each EA were analyzed independently.

### **Recommendations**

More research or studies should be conducted on each type of extracurricular activity and its impact on the academic indicators that directly relate to the continual cycle perpetuating low SES. This way the effect of each EA can be independently measured. Additionally, it is recommended that a study be conducted to determine if there is a relationship between interest to participate in EAs and AA to see if it is the participation or motivation of the youth that

contributes to their AA. It is further recommended that the public education department evaluate the extracurricular activities offered in schools located in impoverished neighborhoods, and consider allocating resources for the provision of extracurricular activities to youth of all ages as part of their curriculum or in the form of a voucher that could be used for participation in the EA of their choice. Finally, it is recommended that the public education department initiate a pilot project in low income schools to see if there is a financial return on the investment of extracurricular activities in children of low SES.

### **Implications for Social Change**

Consistent with Bronfenbrenner's (1994) ecological system's theory, implications for social change occur at many different levels including individual, family, community, and societal levels. The impacts that may occur if more EAs were available to youth of lower SES include an educated and well-rounded youth that have more opportunity to explore and cultivate their talents and interests applying their skills and abilities into all aspects of their life, making improvements as needed, and meeting or exceeding educational expectations. Families who value both academics and other skills, learning from and sharing with one another as each person grows. Communities that interact with one another, supporting one another through their growth and development of alternative interests and increased AA. A reduction in poverty, and fewer health disparities.

EAs are a luxury afforded to the elite, and consequently those of higher SES excel academically and in their EA of choice. For youth of low SES, something as simple as a school offering dance or music lessons every day after school, could improve the AA of the students in a way that could impact their life forever. As they step into that dance or music class, they could be preparing themselves to learn the necessary social skills needed for classroom learning



(Howie et al., 2010), improving their math skills and abilities (London, and Castrechini, 2010), improving their reading and math scores (Covay & Carbonaro, 2010) and their PIAT scores (Jaeger, 2011), and increasing their overall GPA (O'Donnell, & Kirkner, 2014). All of these things contribute to more educated and self-assured, confident, and productive members of society who are better prepared for personal and occupational success. Without considering this, and without further research to determine if such simple activities could remedy an impoverished society, we will continue to remain stagnant in a society of impoverished children who grow up to become impoverished adults having more impoverished children and paying for it ten times over.

## REFERENCES

- American Psychological Association. (2014). Education and socioeconomic status. Retrieved from <http://www.apa.org/pi/ses/resources/publications/factsheet-education.aspx>
- Basch, C.E. (2011). Physical activity and the achievement gap among urban minority youth. *Journal of School Health* (81)10. 626-634. Retrieved from <http://content.ebscohost.com.vproxy.cune.edu/ContentServer.asp?T=P&P+AN&K=2011275898&S=R&D=rzh&EbscoContent=dGJyMNHr7ESep7I40dVuOLCmr0yeqK9Ssa64S7WWxWxS&ContentCustomer=dGJyMOH17Ibj2PBT69fnhrnb5ofx6gAA>
- Bronfenbrenner, U. (1994). Ecological models of human development. *International Encyclopedia of Education* 3(2). Oxford: Elsevier. Retrieved from [http://www.Columbia.edu/cu/psychology/courses/3615/Readins/BronfenbrennerModelofDevelopment\(short%20version\).pdf](http://www.Columbia.edu/cu/psychology/courses/3615/Readins/BronfenbrennerModelofDevelopment(short%20version).pdf)
- Chin, T. & Phillips, M. (2004). Social reproduction and child-rearing practices: Social class, children's agency, and the summer activity gap. *Sociology of Education* (77)3. 185-210. Retrieved from [http://www.professorreed.com/Chin\\_\\_04.pdf](http://www.professorreed.com/Chin__04.pdf)
- Conger, R. D., Conger, K. J. & Martin, M. J. (2010). Socioeconomic status, family, processes, and individual development. *Journal of Marriage and Family*. 72(3). 685-704. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2910915/pdf/nihms172563.pdf>
- Common Core Standards Initiative. (2014). What parents should know. Retrieved from <http://www.corestandards.org/what-parents-should-know/>
- Covay, E. & Carbonaro, W. (2010). After the Bell: Participation in Extracurricular Activities, Classroom Behavior, and Academic Achievement. *Sociology of Education* 83 (1). Retrieved

from <http://www.jstor.org.vproxy.cune.edu/stable/pdfplus/25677180.pdf?>

[&acceptTC=true&jpdConfirm=true](#)

Feldman, A. F. & Matjasko, J. L. (2005). The role of school-based extracurricular activities in adolescent development: A comprehensive review and future direction. *Review of Educational Research* (5)2. Retrieved from <http://jstor.org.vproxy.cune.edu/stable/pdfplus/3516048.pdf?&acceptTC=true&jpdConfirm=true>

Ficella, K. & Kitzman, H. (2009). Disparities in academic achievement and health: The intersection of child education and health policy. *Journal of Pediatrics* (123).3. 1073-1080. Retrieved from <http://pediatrics.aappublications.org/content/123/3/1073.full.pdf+html>

Di Clemente, R.J., Salazar, L.F. & Crosby, R.A. (2013). *Health behavior theory for public health: Principles, foundations, and applications*. MA: Jones and Bartlett Learning

Dumais, S. A. (2006). Elementary school students' extracurricular activities: The effects of participation on achievement and teachers' evaluations. *Sociological spectrum* 26, 117-147.

Ficella, K. & Kitzman, H. (2009). Disparities in academic achievement and health: The intersection of child education and health policy. *Journal of Pediatrics* (123).3. 1073-1080. Retrieved from <http://pediatrics.aappublications.org/content/123/3/1073.full.pdf+html>

Hernandez, D. J. (2012). Double jeopardy: How third-grade reading skills and poverty influence high school graduation. Annie E. Casey Foundation. Retrieved from <http://www.aecf.org/m/resourcedoc/AECF-DoubleJeopardy-2012-Full.pdf#page=3>

Howie, L. D., Lukacs, S. L., Pastor, P., N., Reuben, C., A. & Mendola, P. (2010). Participation in activities outside of school hours in relation to problem behavior and social skills in middle childhood. *Journal of School Health* 80 (3). Retrieved from <http://content.ebscohost.com.vproxy.cune.edu/ContentServer.asp?T=P&P=AN&K>

- =2010568412&S=R&D=rzh&EbscoContent=dGJyMNHr7ESeprA4zOX0OLCmr0yep7dSsKq4SK6WxWXS&ContentCustomer=dGJyMOHl7Ibj2PBT69fnhrnb5ofx6gAA
- Institute for research and poverty (2014). Finding online demographics. Retrieved from <http://www.irp.wisc.edu/faqs/faq9.htm>
- Jaeger, M. M. (2011). Does cultural capital really affect academic achievement? New evidence from combined sibling and panel data. *Sociology of Education* 84 (4). Retrieved from <http://www.jstor.org.vproxy.cune.edu/stable/pdfplus/23057048.pdf?&acceptTC=true&jpdConfirm=true>
- Lareau, A. (2003). *Unequal childhoods: Class, race, and family*. CA: University of California Press.
- Lipsey, M. W. & Wilson, D. B. (2001). *Practical meta-analysis*. Thousand Oaks, CA: SAGE Publications.
- London, R. A. & Castrechini, S. (2011). A longitudinal examination of the link between youth physical fitness and academic achievement. *Journal of School Health* 81 (7). Retrieved from <http://content.ebscohost.com.vproxy.cune.edu/ContentServer.asp?T=P&P=AN&K=2011167294&S=R&D=rzh&EbscoContent=dGJyMNHr7ESeprA4zOX0OLCmr0yep7dSsam4SbaWxWXS&ContentCustomer=dGJyMOHl7Ibj2PBT69fnhrnb5ofx6gAA>
- Mahoney J. L. & Lord, H. Carryl, E. (2005). An ecological analysis of after-school program participation and the development of academic performance and motivational attributes for disadvantaged children. *Child Development* (76)4. 811-825.
- NM Center on Law and Poverty. (2014). Alleviating poverty will improve education in New Mexico: A report by the NM center on law and poverty retrieved from <http://nmpovertylaw.org/WP-nmclp/wordpress/WP-nmclp/wordpress/wp->

content/uploads/2014/Report-Education-FINAL-2013-01-06.pdf

- O'Donnell J. & Kirkner, S. L. (2014). Effects of an out-of-school program on urban high school youth's academic performance. *Journal of Community Psychology* 42 (2). Retrieved from [http://www.readcube.com/articles/10.1002%2Fjcop.21603?r3\\_referer=wol](http://www.readcube.com/articles/10.1002%2Fjcop.21603?r3_referer=wol)
- Schuna, J. M., Lauersdorf, R. L., Behrerns, T. K., Liguori, G. & Liebert, M. L. (2012). An objective assessment of children's physical activity during the keep it moving afterschool program. *Journal of School Health* (83)2. 105-111. Retrieved from <http://content.ebscohost.com.vproxy.cune.edu/ContentServer.asp?T=P&P=AN&K=2011891391&S=R&D=rzh&EbscoContent=dGJyMNHr7ESep7I40dvuOLCmr0yep7dSrqu4S7WWxWXS&ContentCustomer=dGJyMOHl7Ibj2PBT69fnhrnb5ofx6gAA>
- Social Science Statistics. Tests. Chisquare 5x5 calculator. Retrieved from <http://www.socscistatistics.com/tests/chisquare2/Default2.aspx>
- Trudeau, F. & Shephard, R. (2010). Relationships of physical activity to brain health in academic performance of school children. *American Journal of Lifestyle Medicine* (4)2. 138-150.
- Chun, H. Dickenson, G. (2011). A psychoecological model of academic performance among Hispanic adolescents. *Journal of Youth and Adolescence* (40)12. 1581-1594.
- United States Census Bureau (n.d.). Statistics in schools. Retrieved from <http://www.census.gov/census-sis/>
- U.S. Census Bureau (2014). Poverty. 2013 Highlights. Retrieved from <https://www.census.gov/hhes/www/poverty/about/overview/>
- U.S. Department of Education. (n.d.). National center for education statistics. Retrieved from <http://nces.ed.gov/>
- U.S. Department of Education (2013). National center for education statistics. Population

characteristics and demographics. Children living in poverty. Retrieved from  
[https://nces.ed.gov/programs/coe/pdf/coe\\_cce.pdf](https://nces.ed.gov/programs/coe/pdf/coe_cce.pdf)

U.S. Department of Education (2013). The Nation's report card. Math and reading. Retrieved  
 from [http://www.nationsreportcard.gov/reading\\_math\\_2013/#/gains-percentiles](http://www.nationsreportcard.gov/reading_math_2013/#/gains-percentiles)

Wi, Y. S. (2012). Association between physical activity and academic performance in Korean  
 adolescent students. *Biomed Central (BMC) Public Health*, 12, 258, Retrieved from  
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3412726/pdf/1471-2458-12-258.pdf>

Worstell, T. (2012). If the US spends \$550 billion on poerty how can there still be poverty in the  
 US? Forbes. Retrieved from <http://www.forbes.com/sites/timworstell/2012/09/13/if-the-us-spends-550-billion-on-poverty-how-can-there-still-be-poverty-in-the-us/>